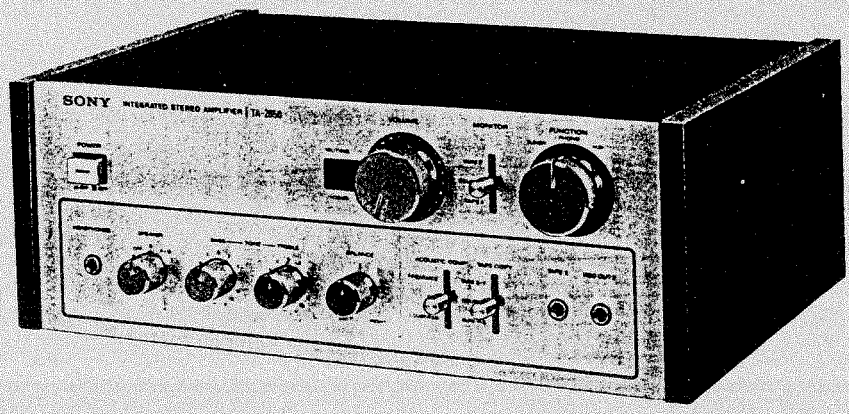
SERV. 7592

TA-2650

UK Model

AEP Model



INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

GENERAL

Power Requirements:	110, 127, 220 or 240 V ac adjustable, 50/60 Hz
Power Consumption:	275 W (UK model)
	400 W (AEP model)
Dimensions:	Approx.
	390 (w) x 145 (h) x 290 (d) mm
	15 1/8 (w) x 5 3/4 (h) x 11 1/4 (d) inches
	Including projecting parts and controls
Weight:	Approx. 8.65 kg, 19 lb 1 oz (net)
	Approx. 10.5 kg, 23 lb 3 oz (with shipping carton)

AMPLIFIER SECTION

Continuous RMS Power Output: (rated output) (Less than 0.2 % harmonic distortion)	Both channels driven simultaneously
	At 20 – 20,000 Hz
	43 + 43 W (8 Ω)
	At 1 kHz
	48 + 48 W (8 Ω)
	58 + 58 W (4 Ω) (AEP model)
	According to DIN 45,500
	43 + 43 W (8Ω)
Dynamic Power Output: (IHF constant power supply method)	150 W (8 Ω)
	170 W (4 Ω) (AEP model)
Power Bandwidth:	10 – 40,000 Hz, IHF
Damping Factor:	25 (8 Ω, at 1 kHz)
Harmonic Distortion:	Less than 0.2 % at rated output
	Less than 0.15 % at 1 W output
IM Distortion: (60 Hz: 7 kHz=4:1)	Less than 0.2 % at rated output
	Less than 0.15 % at 1 W output
Residual Noise:	Less than 0.25 μV (8 Ω)

– Continued on page 2 –

SONY®

SERVICE MANUAL

– Contidued from page 1 –

Inputs:

	Sensitivity	Impedance	Maximum Input Capability (THD 0.2 %)	S/N (weighting network, input level)
PHONO	2.5 mV (–50 dB)	50 kΩ	200 mV	70 dB (B, 2.5 mV)
TUNER AUX TAPE1, 2 REC/PB	150 mV (–14.5 dB)	100 kΩ	———	90 dB (A, 150 mV)

Outputs:

	Output Level	Impedance
REC OUT 1, 2	150 mV	10 kΩ
REC/PB	30 mV	82 kΩ
HEADPHONES	Accepts low and high impedance headphones	
SPEAKERS	Accepts speakers of 4 – 16 Ω (AEP model)	
	Accepts soeakers of 8 Ω or more (UK model)	

Frequency Response: PHONO RIAA equalization curve ± 0.5 dB

TUNER, AUX, TAPE 1, 2, REC/PB (input) } 10 Hz – 100 kHz $^{+0}_{-2}$ dB

Tone Controls: BASS

± 9 dB at 100 Hz (turnover freq 250 Hz)

TREBLE

± 6.5 dB at 10 kHz (turnover freq 4 kHz)

LOUDNESS (att. 30 dB): +8.8 dB at 50 Hz, 2.5 dB at 10 kHz

PRESENCE (att. 30 dB): +2.5 dB at 1 kHz

0 dB = 0.775 V

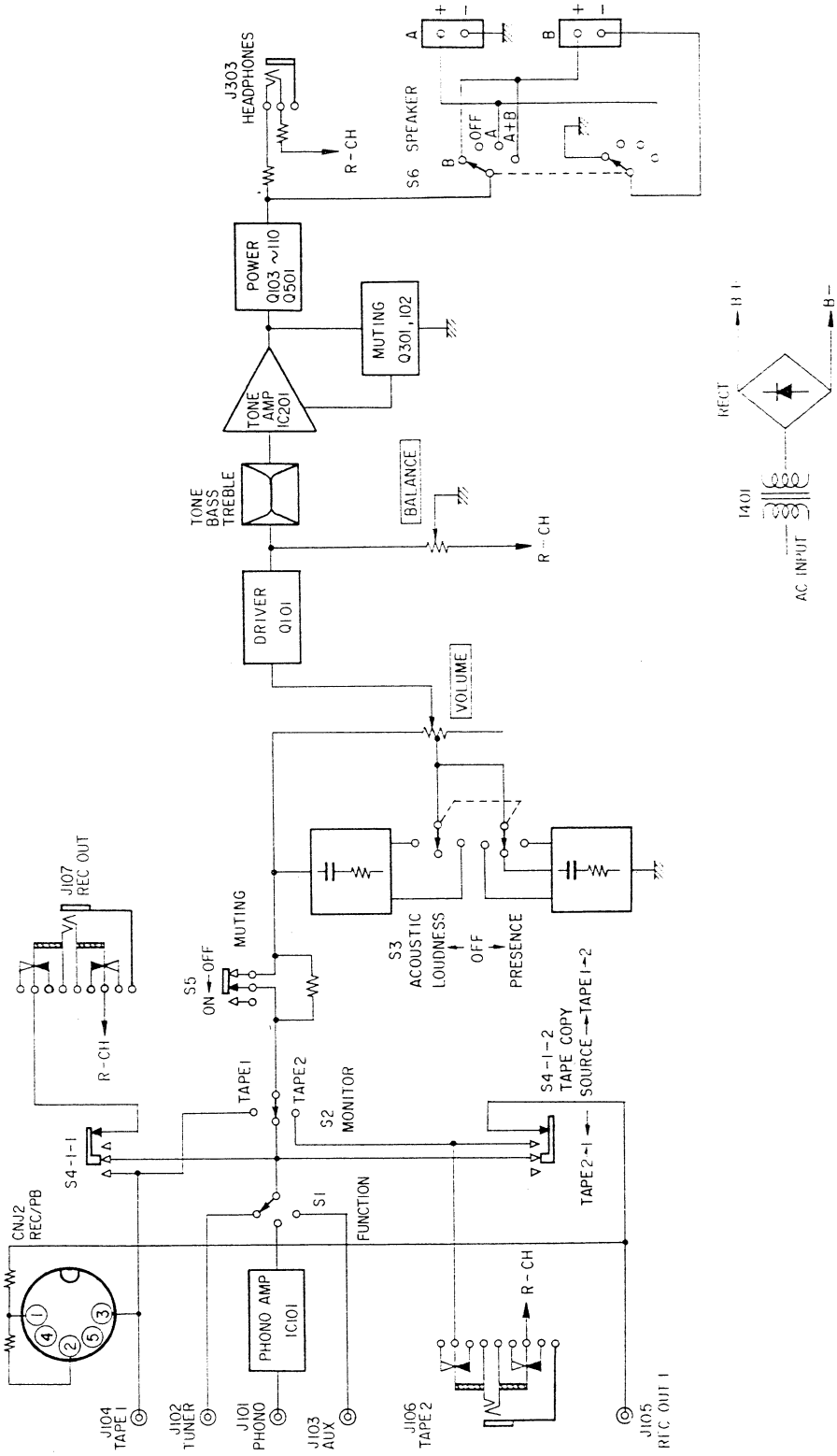
IDENTIFICATION OF SET

TA-2650 is classified by the specification label as shown below.

	Specification Label
UK Model	SONY INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 275W SERIAL NO. MADE IN JAPAN
AEP Model	SONY INTEGRATED STEREO AMPLIFIER MODEL NO. TA-2650 AC 110, 127, 220, 240V~50 60Hz 400W SERIAL NO. MADE IN JAPAN

SECTION 1
OUTLINE

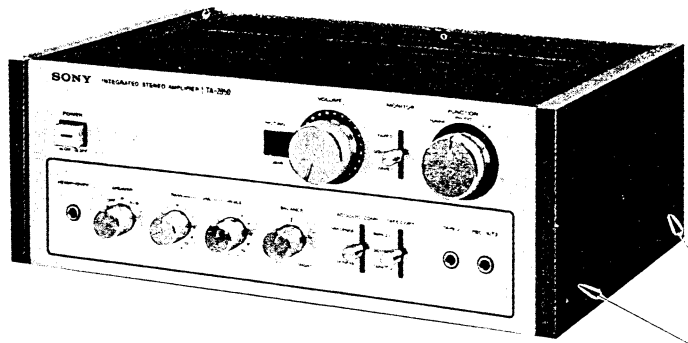
BLOCK DIAGRAM



SECTION 2
DISASSEMBLY

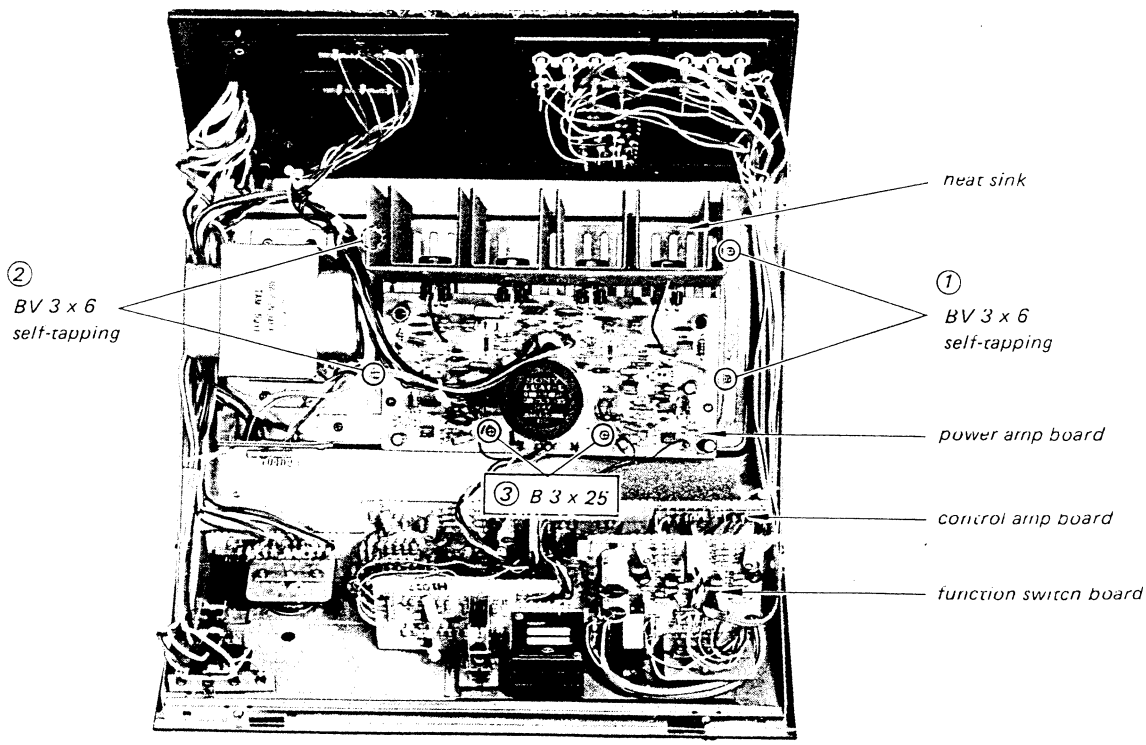
2-1. REMOVALS

SIDE BOARD and TOP COVER



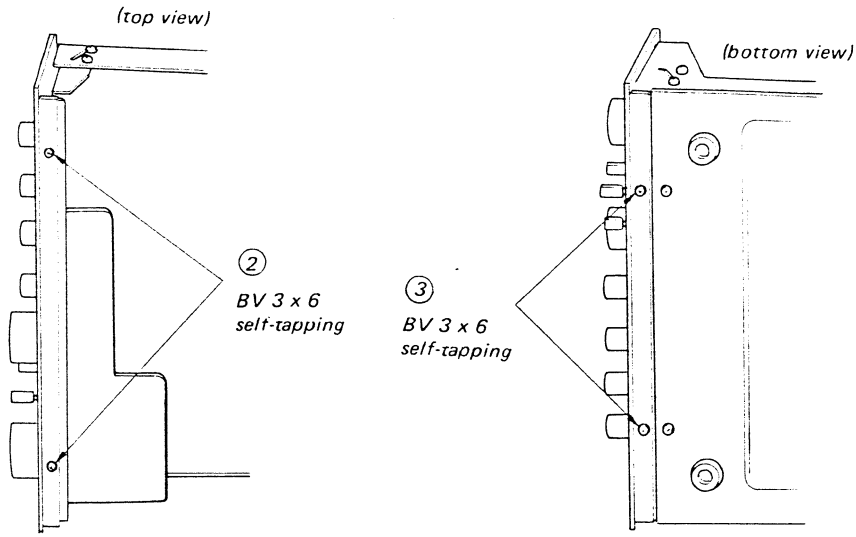
POWER AMP BOARD

④ Remove the power amp board with the heat sink.

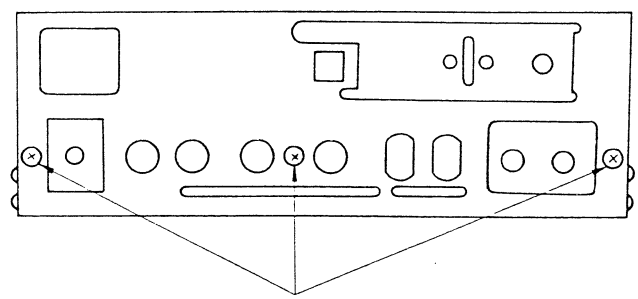


FRONT PANEL

① Pull the knobs out.

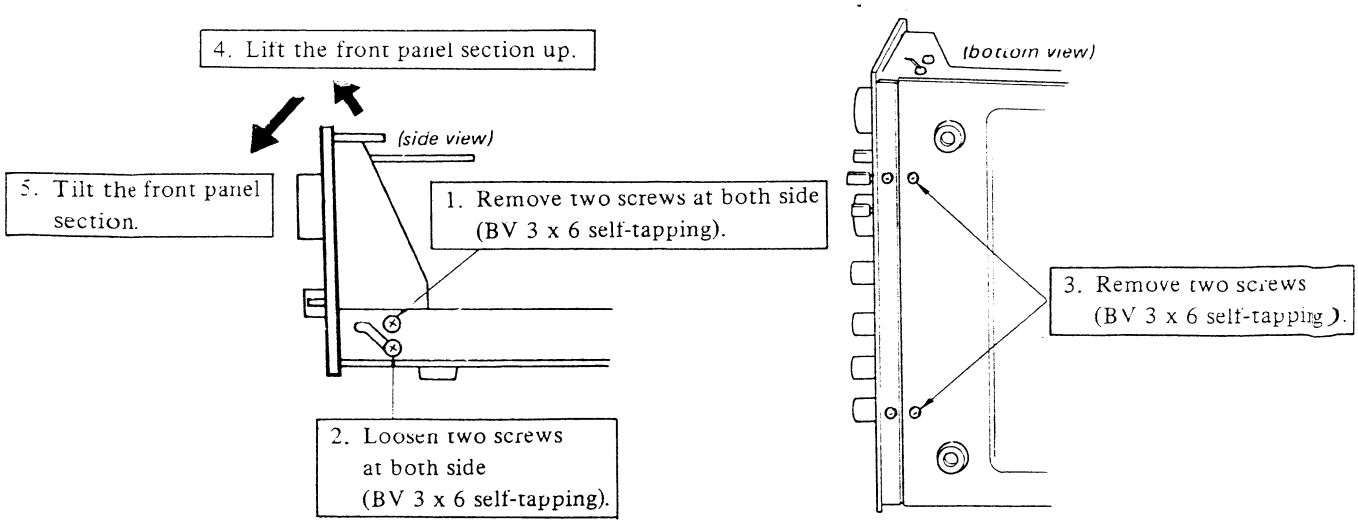


CONTROL AMP BOARD



② Remove the control board with the circuit board bracket.

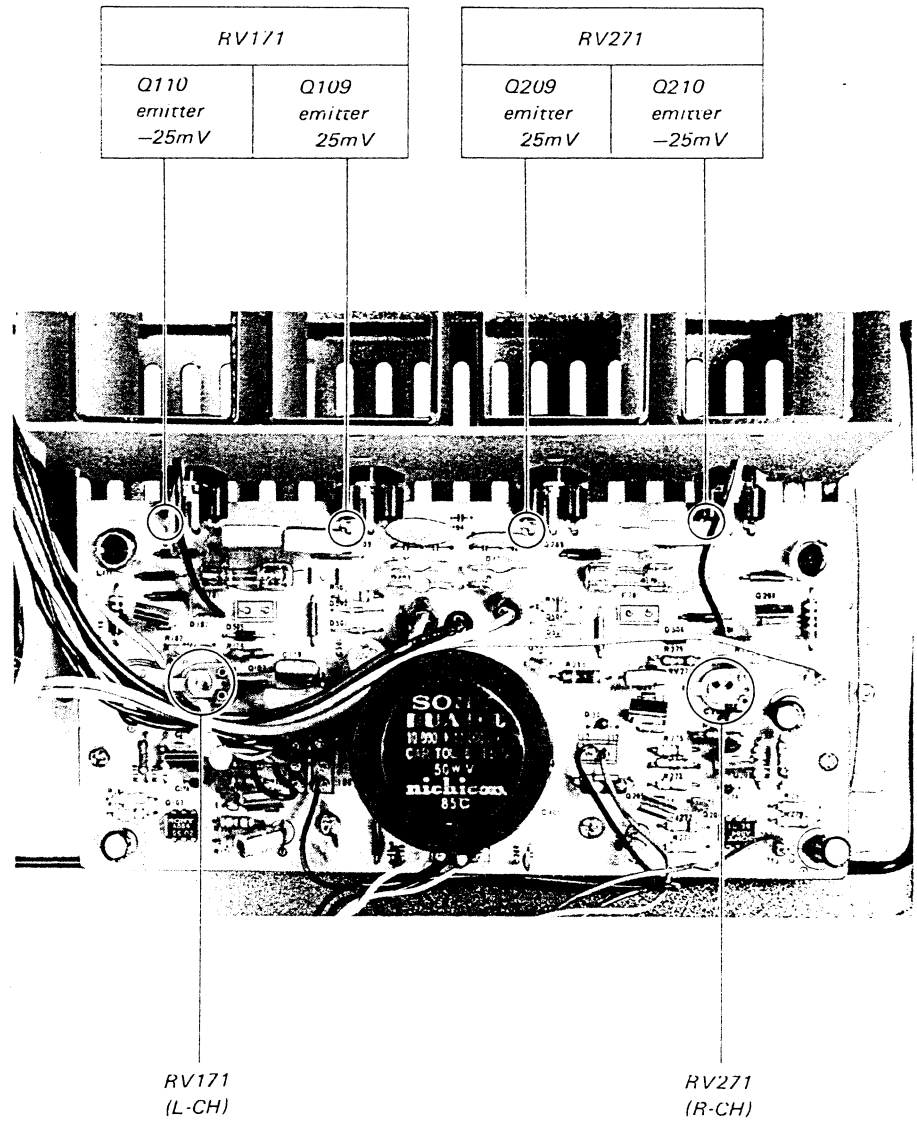
2-2. HOW TO RAISE THE CIRCUIT BOARDS (FUNCTION SWITCH and CONTROL AMP BOARDS)


4. Lift the front panel section up.
(side view)
5. Tilt the front panel section.
1. Remove two screws at both side (BV 3 x 6 self-tapping).
2. Loosen two screws at both side (BV 3 x 6 self-tapping).
(bottom view)
3. Remove two screws (BV 3 x 6 self-tapping).

SECTION 3
ADJUSTMENT

2-1. DC BIAS ADJUSTMENT

Adjust RV171 and RV271 for specified values.



SECTION 4
DIAGRAMS

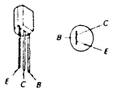
4-1. MOUNTING DIAGRAM

– Component Side –

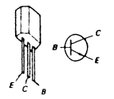
- B+ pattern
- B– pattern

IC101, 201: CX046

Q101, 201: 2SC1362
Q301: 2SC1364

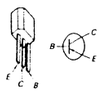


Q102, 202: 2SC1637
Q501: 2SC634

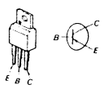


Q103, 203: 2SA884

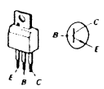
Q104, 204, 502: 2SA678



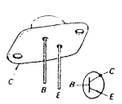
Q105, 108, 205, 208: 2SA706



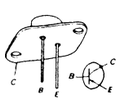
Q106, 107, 206, 207: 2SC1124



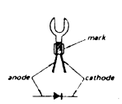
Q109, 209: 2SD532

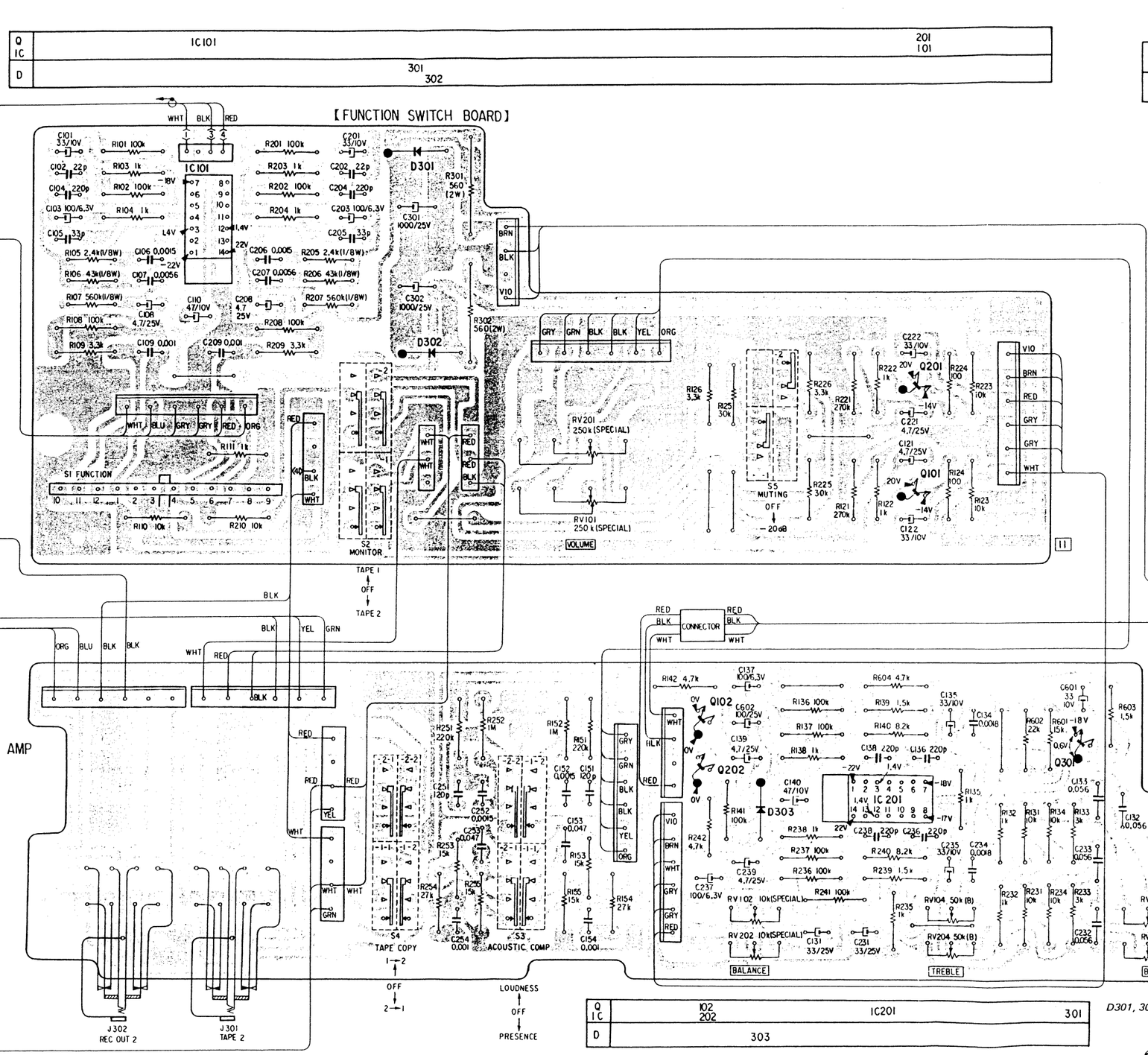


Q110, 210: 2SB518



D101, 201: SV04F



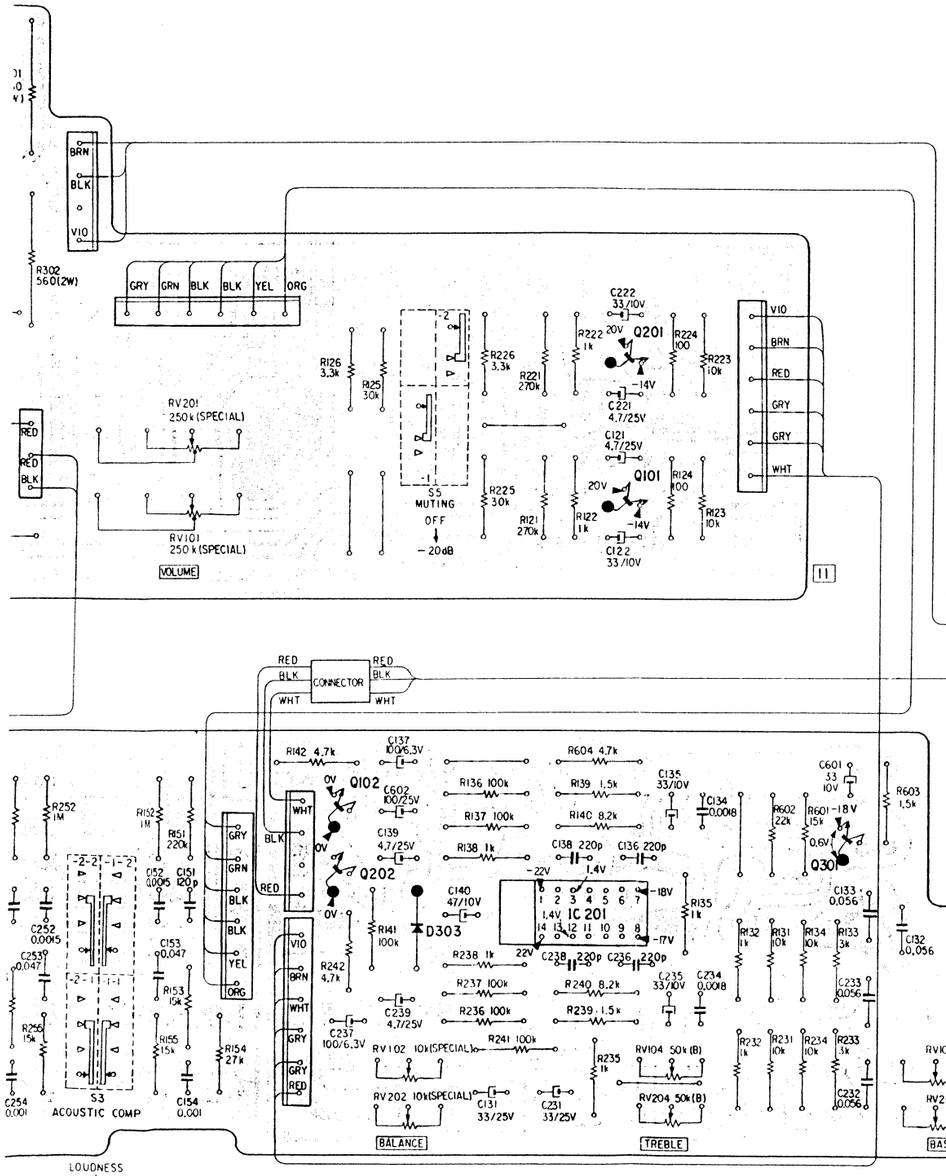


D301, 302: EQA01-22R

D303, 505, 506: 10E2
D501 ~ 504: 1S1555

	201 101

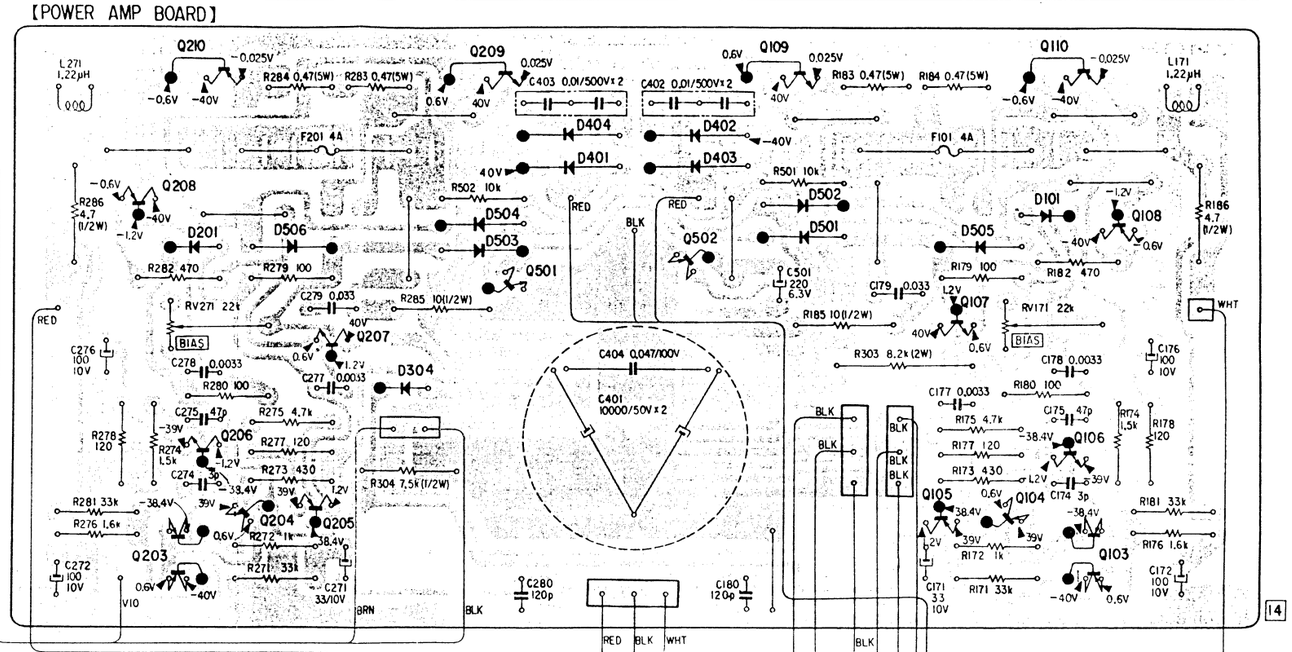
BOARD】



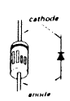
Q IC	102 202 IC201 301
D	303

Q	208 210 203 206 204 205 207 209 501 502 109 105 107 104 110 106 103 108
D	201 506 304 504 503 404 401 402 403 502 501 505 101

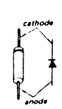
【POWER AMP BOARD】



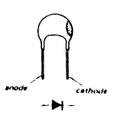
D301, 302: EQA01-22R



D303, 505, 506: 10E2
D501 ～ 504: 1S1555

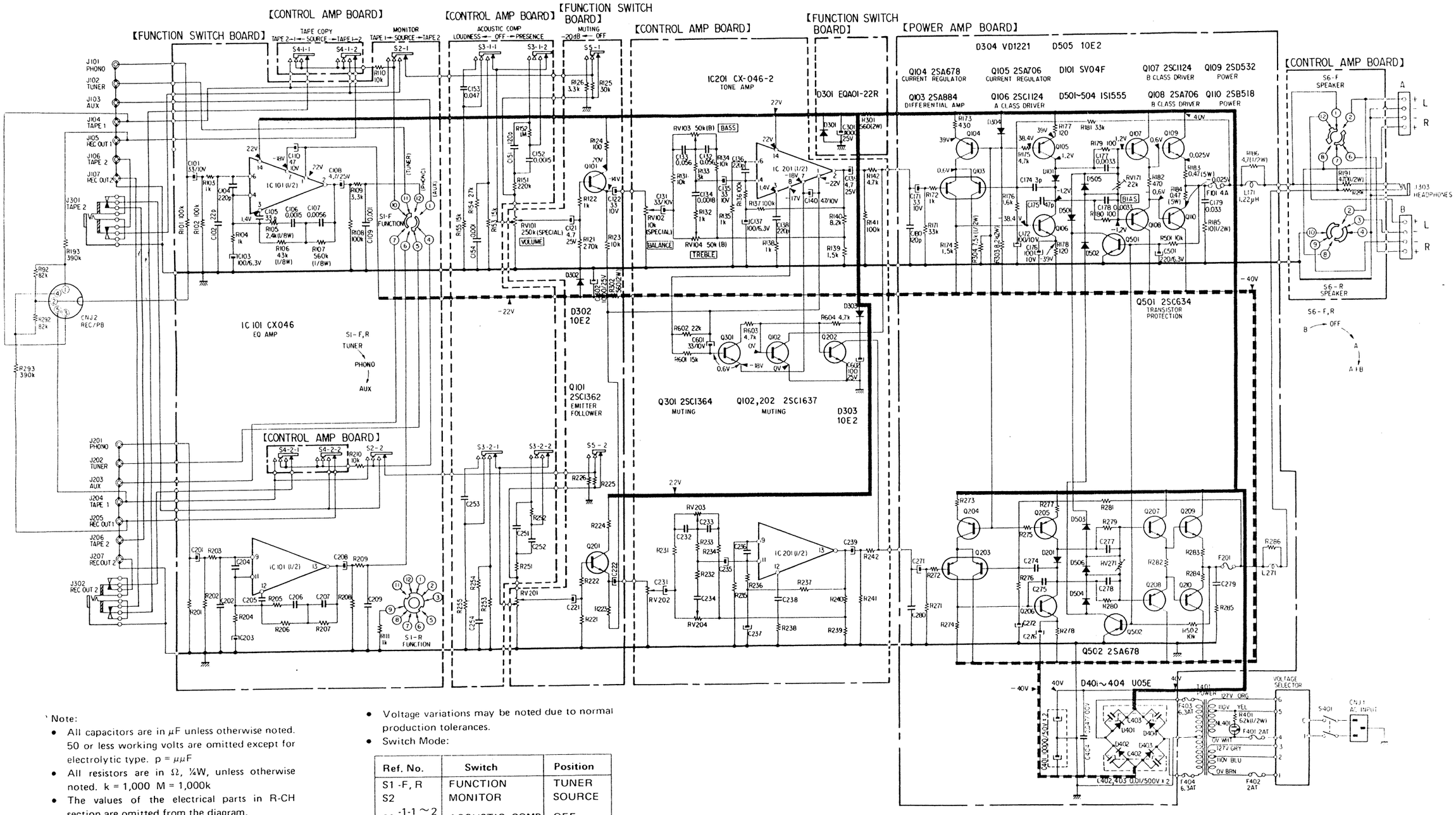


D304: VD1221



D401 ～ 404: U05E

4-2. SCHEMATIC DIAGRAM

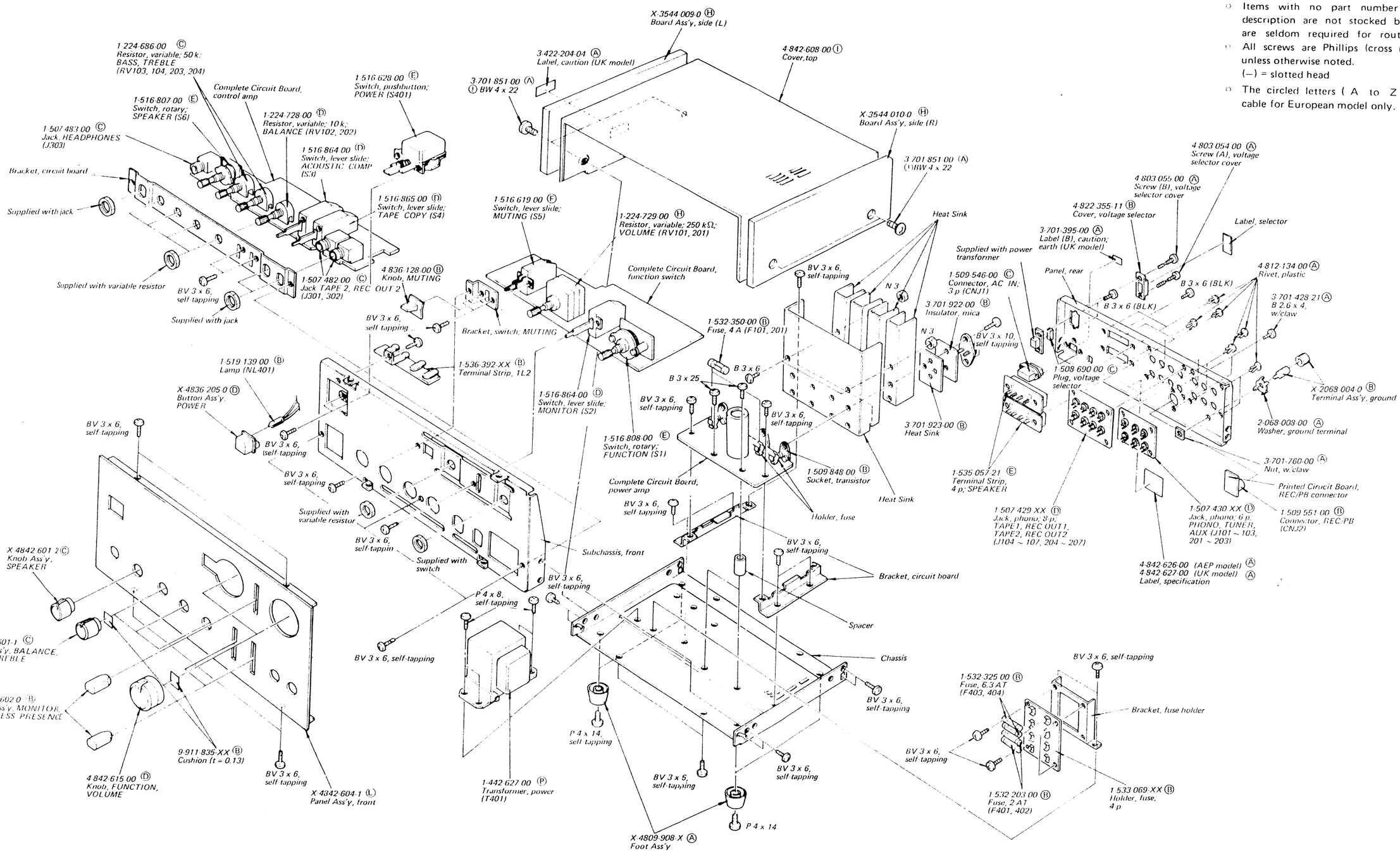


Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p = μμF
- All resistors are in Ω, ¼W, unless otherwise noted. k = 1,000 M = 1,000k
- The values of the electrical parts in R-CH section are omitted from the diagram.
- ⏚ indicates chassis ground.
- ▬▬ indicates B+ circuit.
- ▬ ▬ ▬ indicates B− circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20kΩ/v).
- Voltage variations may be noted due to normal production tolerances.
- Switch Mode:

Ref. No.	Switch	Position
S1 -F, R	FUNCTION	TUNER
S2	MONITOR	SOURCE
S3 -1-1 ~ 2 / -2-1 ~ 2	ACOUSTIC COMP	OFF
S4 -1-1 ~ 2 / -2-1 ~ 2	TAPE COPY	SOURCE
S5	MUTING	OFF
S6 -F, R	SPEAKER	B
S401	POWER	OFF

SECTION 5
EXPLODED VIEW


1-224-686-00 Ⓒ Resistor, variable; 50 k: BASS, TREBLE (RV103, 104, 203, 204)
Complete Circuit Board, control amp
1-516-628-00 Ⓔ Switch, pushbutton; POWER (S401)
1-516-807-00 Ⓔ Switch, rotary; SPEAKER (S6)
1-224-728-00 Ⓓ Resistor, variable; 10 k; BALANCE (RV102, 202)
1-507-483-00 Ⓒ Jack, HEADPHONES (J303)
1-516-864-00 Ⓓ Switch, lever slide; ACOUSTIC COMP (S3)
Bracket, circuit board
Supplied with jack
1-516-865-00 Ⓓ Switch, lever slide; TAPE COPY (S4)
Supplied with variable resistor
1-507-482-00 Ⓒ Jack TAPE 2, REC OUT 2 (J301, 302)
4-836-128-00 Ⓑ Knob, MUTING
BV 3 x 6, self-tapping
Supplied with jack
BV 3 x 6, self-tapping
Bracket, switch; MUTING
1-519-139-00 Ⓑ Lamp (NL401)
1-536-392-XX Ⓑ Terminal Strip, 1L2
X-4836-205-0 Ⓓ Button Ass'y, POWER
1-516-864-00 Ⓓ Switch, lever slide; MONITOR (S2)
BV 3 x 6, self-tapping
BV 3 x 6, self-tapping
BV 3 x 6, self-tapping
Supplied with variable resistor
BV 3 x 6, self-tappin
Supplied with switch
Subchassis, front
P 4 x 8, self-tapping
BV 3 x 6, self-tapping
X-4842-601-2 Ⓒ Knob Ass'y, SPEAKER
X-4842-601-1 Ⓒ Knob Ass'y, BALANCE, BASS, TREBLE
X-4842-602-0 Ⓑ Knob Ass'y, MONITOR, LOUDNESS, PRESENCE
9-911-835-XX Ⓑ Cushion (t = 0.13)
4-842-615-00 Ⓓ Knob, FUNCTION, VOLUME
BV 3 x 6, self-tapping
X-4342-604-1 Ⓛ Panel Ass'y, front
1-442-627-00 Ⓟ Transformer, power (T401)
P 4 x 14, self-tapping
X-4809-908-X Ⓐ Foot Ass'y
BV 3 x 5, self-tapping
P 4 x 14
X-3544-009-0 Ⓗ Board Ass'y, side (L)
3-422-204-04 Ⓐ Label, caution (UK model)
3-701-851-00 Ⓐ ① BW 4 x 22
4-842-608-00 ① Cover, top
X-3544-010-0 Ⓗ Board Ass'y, side (R)
3-701-851-00 Ⓐ ① BW 4 x 22
1-516-619-00 Ⓕ Switch, lever slide; MUTING (S5)
1-224-729-00 Ⓗ Resistor, variable; 250 kΩ; VOLUME (RV101, 201)
Complete Circuit Board, function switch
Heat Sink
BV 3 x 6, self-tapping
N 3
Supplied with power transformer
1-509-546-00 Ⓒ Connector, AC IN; 3 p (CNJ1)
3-701-922-00 Ⓑ Insulator, mica
N 3
BV 3 x 10, self-tapping
1-532-350-00 Ⓑ Fuse, 4 A (F101, 201)
B 3 x 6
B 3 x 25
BV 3 x 6, self-tapping
BV 3 x 6, self-tapping
3-701-923-00 Ⓑ Heat Sink
1-516-808-00 Ⓔ Switch, rotary; FUNCTION (S1)
1-509-848-00 Ⓑ Socket, transistor
Complete Circuit Board, power amp
Heat Sink
BV 3 x 6, self-tapping
Holder, fuse
BV 3 x 6, self-tapping
Bracket, circuit board
Spacer
Chassis
BV 3 x 6, self-tapping
BV 3 x 6, self-tapping
BV 3 x 6, self-tapping
4-803-054-00 Ⓐ Screw (A), voltage selector cover
4-803-055-00 Ⓐ Screw (B), voltage selector cover
4-822-355-11 Ⓑ Cover, voltage selector
Label, selector
3-701-395-00 Ⓐ Label (B), caution; earth (UK model)
Panel, rear
4-812-134-00 Ⓐ Rivet, plastic
B 3 x 6 (BLK)
B 3 x 6 (BLK)
3-701-428-21 Ⓐ B 2.6 x 4, w/claw
1-508-690-00 Ⓒ Plug, voltage selector
X-2068-004-0 Ⓑ Terminal Ass'y, ground
2-068-009-00 Ⓐ Washer, ground terminal
3-701-760-00 Ⓐ Nut, w/claw
Printed Circuit Board, REC/PB connector
1-509-551-00 Ⓑ Connector, REC/PB (CNJ2)
1-535-057-21 Ⓔ Terminal Strip, 4 p; SPEAKER
1-507-429-XX Ⓓ Jack, phono; 8 p; TAPE1, REC OUT1, TAPE2, REC OUT2 (J104 ~ 107, 204 ~ 207)
1-507-430-XX Ⓓ Jack, phono; 6 p; PHONO, TUNER, AUX (J101 ~ 103, 201 ~ 203)
4-842-626-00 (AEP model) Ⓐ
4-842-627-00 (UK model) Ⓐ
Label, specification
BV 3 x 6, self-tapping
1-532-325-00 Ⓡ Fuse, 6.3 AT (F403, 404)
Bracket, fuse holder
BV 3 x 6, self-tapping
1-532-203-00 Ⓡ Fuse, 2 AT (F401, 402)
1-533-069-XX Ⓡ Holder, fuse; 4 p

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- The circled letters (A to Z) are applicable for European model only.

○ The circled letter (A to Z) are applicable for European model only.

Ref. No.	Part No.		Description		
RESISTORS					
All resistors are in Ω. Regular type, ¼W carbon and composition resistors are omitted. Check the schematic diagram for resistance values. (k = 1000, M = 1000k)					
R105, 205	1-246-482-11	(A)	2.4k	1/8W	carbon
R106, 206	1-246-512-11	(A)	43k	1/8W	carbon
R107, 207	1-246-539-11	(A)	560k	1/8W	carbon
R183, 283 R184, 284	1-217-158-11	(A)	0.47	5W	wire-wound
R185, 285	1-202-525-00	(A)	10	½W	composition
R186, 286	1-202-517-00	(A)	4.7	½W	composition
R191, 291	1-202-565-35	(A)	470	½W	composition
R301, 302	1-206-658-11	(A)	560	2W	metal oxide
R303	1-206-686-11	(A)	8.2k	2W	metal oxide
R304	1-211-659-11	(A)	7.5k	½W	carbon
R401	1-202-616-00	(A)	62k	½W	composition
RV101, 201	1-224-729-00	(H)	250k	variable, VOLUME	
RV102, 202	1-224-728-00	(D)	10k	variable, BALANCE	
RV103, 203 RV104, 204	1-224-686-00	(C)	50k	variable, BASS; TREBLE	
RT171, 271	1-224-646-XX	(B)	22k	adjustable	
SWITCHES					
S1	1-516-808-00	(E)	Rotary, FUNCTION		
S2, 3	1-516-864-00	(D)	Lever Slide, MONITOR, ACOUSTIC COMP		
S4	1-516-865-00	(D)	Lever Slide, TAPE COPY		
S5	1-516-619-00	(F)	Lever Slide, MUTING		
S6	1-516-807-00	(E)	Rotary, SPEAKER		
S401	1-516-628-00	(E)	Pushbutton, POWER		

Ref. No.	Part No.		Description
JACKS			
J101 ~ 103 J201 ~ 203	1-507-430-XX	(D)	Phono, 6-p; PHONO, TUNER, AUX
J104 ~ 107 J204 ~ 207	1-507-429-XX	(D)	Phono, 8-p; TAPE 1, REC OUT 1, TAPE 2, REC OUT 2
J301, 302	1-507-482-00	(C)	TAPE 2, REC OUT 2
J303	1-507-483-00	(C)	HEADPHONES
CNJ1	1-509-546-00	(C)	Connector, AC IN; 3-p
CNJ2	1-509-551-00	(B)	Connector, REC/PB
MISCELLANEOUS			
CP401	1-231-057-31	(B)	Encapsulated Components, C-R
F101, 102	1-532-350-00	(B)	Fuse, 4A
F401, 402	1-532-203-00	(B)	Fuse, 2AT
F403, 404	1-532-325-00	(B)	Fuse, 6.3AT
NL401	1-519-139-00	(B)	Lamp
T401	1-442-627-00	(P)	Transformer, power
	1-508-690-00	(C)	Plug, voltage selector
	1-509-848-00	(B)	Socket, transistor
	1-533-069-XX	(B)	Holder, fuse; 4-p
	1-535-057-21	(E)	Terminal Strip, 4-p; SPEAKER
	1-536-392-XX	(B)	Terminal Strip, 1L2
ACCESSORIES			
	1-534-819-00	(G)	Cord, power (UK model)
	3-780-751-11	(B)	Manual, instruction

Sony Corporation

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SECTION 6
ELECTRICAL PARTS LIST

○ The circled letter (A to Z) are applicable for European model only.

Ref. No.	Part No.	Description		
		SEMICONDUCTORS		
		Transistors		
Q101, 201		Ⓑ 2SC1362		
Q102, 202		Ⓑ 2SC1637		
Q103, 203		Ⓓ 2SA884		
Q104, 204		Ⓒ 2SA678		
Q105, 205		Ⓓ 2SA706		
Q106, 206 Q107, 207	)	Ⓒ 2SC1124		
Q108, 208		Ⓓ 2SA706		
Q109, 209		Ⓕ 2SD532		
Q110, 210		Ⓛ 2SB518		
Q301		Ⓑ 2SC1364		
Q501		Ⓑ 2SC634		
Q502		Ⓒ 2SA678		
		IC's		
IC101, 201		Ⓗ CX046		
		Diodes		
D101, 201		Ⓑ SV04F		
D301, 302		Ⓑ EQA01-22R		
D303		Ⓑ 10E2		
D304		Ⓑ VD1221		
D401 ~ 404		Ⓒ U05E		
D501 ~ 504		Ⓑ 1S1555		
D505, 506		Ⓑ 10E2		
		CAPACITORS		

All capacitors are in μF and of mylar unless otherwise noted.
(p = μμF, elect = electrolytic)
50 and/or less working voltages are omitted except for tic type. electrolytic type.

C101, 201	1-121-926-11	Ⓐ 33	10V	elect
C102, 202	1-102-959-11	Ⓐ 22p		ceramic
C103, 203	1-121-413-11	Ⓐ 100	6.3V	elect
C104, 204	1-102-978-11	Ⓐ 220p		ceramic
C105, 205	1-102-963-11	Ⓐ 33p		ceramic
C106, 206	1-108-794-12	Ⓐ 0.0015		
C107, 207	1-108-801-12	Ⓐ 0.0056		
C108, 208	1-121-915-11	Ⓐ 4.7	25V	elect
C109, 209	1-108-792-12	Ⓐ 0.001		
C110	1-121-927-11	Ⓑ 47	10V	elect
C121, 221	1-121-915-11	Ⓐ 4.7	25V	elect
C122, 222 C131, 231	) 1-121-926-11	Ⓐ 33	10V	elect
C132, 232 C133, 233	) 1-108-846-12	Ⓐ 0.056		
C134, 234	1-108-828-12	Ⓐ 0.0018		
C135, 235	1-121-926-11	Ⓐ 33	10V	elect
C136, 236	1-102-978-11	Ⓐ 220p		ceramic
C137, 237	1-121-413-11	Ⓐ 100	6.3V	elect
C138, 238	1-102-978-11	Ⓐ 220p		ceramic
C139, 239	1-121-915-11	Ⓐ 4.7	25V	elect
C140	1-121-352-11	Ⓐ 47	10V	elect
C151, 251	1-102-816-11	Ⓐ 120p		ceramic
C152, 252	1-108-827-12	Ⓐ 0.0015		
C153, 253	1-108-845-12	Ⓐ 0.047		
C154, 254	1-108-825-12	Ⓐ 0.001		
C171, 271	1-121-926-11	Ⓐ 33	10V	elect
C172, 272	1-121-414-11	Ⓐ 100	10V	elect
C174, 274	1-102-940-11	Ⓐ 3p		ceramic
C175, 275	1-101-880-11	Ⓐ 47p		ceramic
C176, 276	1-121-414-11	Ⓐ 100	10V	elect
C177, 277 C178, 278	) 1-108-831-12	Ⓐ 0.0033		
C179, 279	1-108-843-12	Ⓐ 0.033		
C180, 280	1-102-816-11	Ⓐ 120p		ceramic
C301, 302	1-123-066-11	Ⓑ 1000	25V	elect
C401	1-125-100-11	Ⓚ 10000 x 2	50V	elect
C402, 403	1-102-355-11	Ⓐ 0.01	500V	elect
C404	1-108-634-12	Ⓐ 0.047	100V	
C501	1-121-419-11	Ⓑ 220	6.3V	elect
C601	1-121-926-11	Ⓐ 33	10V	elect
C602	1-121-935-11	Ⓑ 100	25V	elect